

High School Physical Science**Pages:** 93 - 174**Resource Used:** HMH Science Dimensions: Forces, Motion, and Fields**Topic:**

Electric and Magnetic Forces

What Your Student is Learning:

In Lesson 1, students investigate how magnets interact, ask a series of questions about magnets, and gather data that shows that magnets exert forces at a distance, attract or repel each other, and attract other materials that are not magnets.

In Lesson 2, students investigate factors that affect an electric force and observe how charged objects can affect neutral objects. Students gather data about what strength of an electric force depends on and show that electric charges exert forces at a distance and attract or repel each other.

In Lesson 3, students compare the effects of electric, magnetic, and gravitational fields on objects. They plan an investigation about magnetic fields using various magnets and map out magnetic fields using field lines.

In Lesson 4, students investigate how electric and magnetic fields are related and discover that electric currents generate magnetic fields. Students build an electromagnet and determine factors that affect its strength.

Background and Context:

This packet should be completed in about 20 (45-minute) sessions.

[Click here to access the Physical Science Learning Packet](#)

Ways to Support Your Student:

Encourage your students to talk or write about their ideas about the 4 questions above before, during, and after completing the activities. Tell them not to worry about being wrong or not knowing; science is about revising ideas over time based on new information. Students might call or video chat their classmates to discuss these ideas together as well. They should encourage each other to use evidence from the text to support their ideas.

Additional Resource for Parents:

[Tips for Busy Parents](#) who want to support their childrens' science learning

Online Resources for Students:**[Electric and Magnetic Forces](#)**

Khan Academy has a few units related to what you are learning, including:

[Electric Charge, Field and Potential](#)

[Circuits](#), and

[Magnetic Forces, Magnetic Fields, and Faraday's Law](#)